

IN THE CLAIMS

This listing of the claim will replace all prior versions and listings of claim in the present application.

Listing of Claims

1. (currently amended) A virtual computer system, comprising:
a plurality of virtual computers operating on a physical computer having one or more CPUs; and
a hypervisor,
wherein said hypervisor comprises:
a load monitor for monitoring load conditions of said virtual computers from an occupation rate of said CPUs in each of said plurality of virtual computers and/or a length of queue for execution of process in each of said plurality of said virtual computers;
a reallocation section for dynamically changing allocation of physical resources to said plurality of virtual computers; and
a controller for searching physical resource allocation to said virtual computers based on load conditions obtained by said load monitor and for demanding reallocation to said reallocation section.
2. (currently amended) A virtual computer system, comprising:
a plurality of virtual computers operating on a physical computer having one or more CPUs, each of the plurality of virtual computers having an OS for measuring

an occupation rate of said CPUs and/or a length of queue for execution of process;

and

a hypervisor for controlling said virtual computers, for monitoring load conditions of said plurality of virtual computers from information measured by said OS, and for dynamically conducting physical resource allocation to said plurality of virtual computers according to the monitoring condition.

3. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs, each of the plurality of virtual computers having an OS for measuring an occupation rate of said CPUs and/or a length of queue for execution of process;

and

a hypervisor for controlling said plurality of virtual computers, said the hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a first virtual computer among said plurality of virtual computers for acquiring information measured by OS operating on a second virtual computers among said plurality of virtual computers, and for demanding reallocation to said reallocation section based on the information.

4. (currently amended) A virtual computer system, comprising:

a plurality of physical computers having one or more CPUs;

a plurality of virtual computers composed on a first physical computers amongst said plurality of physical computers, the virtual computers operating on the physical computer, each of the plurality of virtual computers having an OS for measuring an occupation rate of said CPUs and/or a length of queue for execution of process; and

a hypervisor operating on the first physical computer for controlling said plurality of virtual computers, said the-hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a second physical computer among said plurality of physical computers for acquiring information obtained by OS operating on said first physical computer, and for demanding reallocation to said reallocation section based on the information.

5. (original) A virtual computer system according to Claim 2, wherein said OS can increase or decrease CPUs under operating state, and said hypervisor conducts process to increase or decrease the number of operating CPUs based on said measured information.

6. (currently amended) A virtual computer system, comprising:
a plurality of virtual computers operating on a physical computer having one or more CPUs; and
a hypervisor.

wherein said hypervisor comprises:

a load monitor for monitoring load conditions of said virtual computers from operating condition of said CPUs in each of said plurality of virtual computers;

a reallocation section for dynamically changing allocation of physical resources to said plurality of virtual computers; and

a controller for searching physical resource allocation to said virtual computers based on load conditions obtained by said load monitor, and for demanding reallocation to said reallocation section, the reallocation including an increase/decrease of the number of the operating CPUs.

7. (original) A virtual computer according to Claim 1, wherein said controller generates a reallocation policy which increases a ratio of CPU allocation time offering to a virtual computer having high load from another virtual computer depending on CPU occupation rate of the other virtual computer.

8. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs and main memory device; and

a hypervisor.

wherein said hypervisor comprises:

a load monitor for monitoring load conditions of said virtual computers from load condition of said main memory device in each of said plurality of virtual computers;

a reallocation section for dynamically changing allocation of physical resources to said plurality of virtual computers; and

a controller for searching physical resource allocation to said virtual computers based on load conditions obtained by said load monitor, and for demanding reallocation to said reallocation section.

9. (original) A virtual computer system according to Claim 8, wherein the load conditions of said main memory device is obtained by frequency of paging and/or swap, and said reallocation section dynamically changes allocation amount of areas to said virtual computer of said main memory.

10. (currently amended) A virtual computer system, comprising:
a plurality of virtual computers operating on a physical computer having one or more CPUs and a main memory device, each of the plurality of virtual computers having an OS for measuring load conditions of said main memory device; and
a hypervisor for controlling said virtual computers, for monitoring load conditions of said plurality of virtual computers from information measured by said OS, and for dynamically conducting physical resource allocation to said plurality of virtual computers according to the monitoring condition.

11. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs and a main memory device, each of the plurality of virtual computers having an OS for measuring load conditions of said main memory device; and

a hypervisor for controlling said plurality of virtual computers, said the hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a first virtual computer among said plurality of virtual computers for acquiring information obtained by OS operating on a second virtual computers among said plurality of virtual computers, and for demanding reallocation to said reallocation section based on the information.

12. (currently amended) A virtual computer system, comprising:

a plurality of physical computers having one or more CPUs and a main memory device;

a plurality of virtual computers composed on a first physical computers amongst said plurality of physical computers, the virtual computers operating on the physical computer, each of the plurality of virtual computers having an OS for measuring load conditions of said main memory device; and

a hypervisor operating on a first physical computer for controlling said plurality of virtual computers, said the hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a second physical computer among said plurality of physical computers for acquiring information measured by OS operating on said first physical computers, and for demanding reallocation to said reallocation section based on the information.

13. (currently amended) A virtual computer system, comprising:
- a plurality of virtual computers operating on a physical computer having one or more CPUs, each of said plurality of virtual computers having an OS for controlling execution of an application program; and
 - a hypervisor,
 - wherein said hypervisor comprises:
 - a load monitor for monitoring load conditions of said virtual computers from response time of a process of said application program in each of said plurality of virtual computers;_{i1}
 - a reallocation section for dynamically changing allocation of physical resources to said plurality of virtual computers;_{i1} and
 - a controller for searching physical resource allocation to said virtual computers based on load conditions obtained by said load monitor and for demanding reallocation to said reallocation section.

14. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs, each of said plurality of virtual computers having an OS for controlling execution of an application program; and

a hypervisor for controlling said virtual computers, for monitoring load conditions of said plurality of virtual computers from response time of process obtained from said application program, and for dynamically conducting physical resource allocation to said plurality of virtual computers according to the monitoring condition.

15. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs, each of the plurality of virtual computers having an OS for controlling execution of an application program; and

a hypervisor for controlling said plurality of virtual computers, said the hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a first virtual computer among said plurality of virtual computer for acquiring response time of process obtained by said application program operating on a second virtual computers among said plurality of virtual computers, and for demanding reallocation to said reallocation section based on the information.

16. (currently amended) A virtual computer system, comprising:
a plurality of physical computers having one or more CPUs;
a plurality of virtual computers composed on a first physical computers
amongst said plurality of physical computers, the virtual computers operating on the
physical computer, each of the plurality of virtual computers having an OS for
controlling execution of an application program; and
a hypervisor operating on the first physical computer for controlling said
plurality of virtual computers, said the hypervisor having comprises:
a reallocation section for dynamically changing physical resource allocation to
said plurality of virtual computers; and
a monitoring section operating on a second physical computer among said
plurality of physical computers for acquiring response time of process of the
application program operating on said first physical computer, and for demanding
reallocation to said reallocation section based on the information.

17. (original) A virtual computer system according to Claim 13, wherein
said load condition monitoring section issues transaction to the application program,
and monitors load conditions of said virtual computers based on a time required to
complete said transaction.

18. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs, each of said plurality of virtual computers having an OS for controlling execution of an application program; and

a hypervisor for controlling said virtual computers, for issuing transactions to said application program, for monitoring load conditions of said plurality of virtual computers from response time of process obtained by monitoring a time required to complete the transaction, and for dynamically conducting physical resource allocation to said plurality of virtual computers according to the monitoring condition.

19. (currently amended) A virtual computer system, comprising:

a plurality of virtual computers operating on a physical computer having one or more CPUs, each of the plurality of virtual computers having an OS for controlling execution of an application program; and

a hypervisor for controlling said plurality of virtual computers, said the hypervisor having comprises:

a reallocation section for dynamically changing physical resource allocation to said plurality of virtual computers; and

a monitoring section operating on a first virtual computer among said plurality of virtual computer for acquiring response time of process obtained by monitoring a time required to complete transaction issued to said application program operating on a second virtual computers among said plurality of virtual computers, and for demanding reallocation to said reallocation section based on the information.

20. (currently amended)A virtual computer system, comprising:
a plurality of physical computers having one or more CPUs;
a plurality of virtual computers composed on a first physical computers
amongst said plurality of physical computers, the virtual computers operating on the
physical computer, each of the plurality of virtual computers having an OS for
controlling execution of an application program; and
a hypervisor operating on the first physical computer for controlling said
plurality of virtual computers, said the-hypervisor comprises: having
a reallocation section for dynamically changing physical resource allocation to
said plurality of virtual computers; and
a monitoring section operating on a second physical computer among said
plurality of physical computers for acquiring time required to complete transaction
issued the application program operating on said first physical computer, and for
demanding reallocation to said reallocation section based on the information.

21. (currently amended)A virtual computer system, according to claim 1
further comprising:
~~a plurality of virtual computers operating on a physical computer having one~~
~~or more CPUs; a load monitor for monitoring load conditions of said plurality of virtual~~
~~computers; a storing section for storing contents of a plurality of actions for changing~~
physical resources allocated to virtual computers judged as high load by said load
monitor; and a means for implementing said plurality of actions sequentially and for

conducting physical resource reallocation according to contents of actions having effectiveness for lowering the load.

22. (currently amended) A virtual computer system according to claim 1,
wherein, comprising: ~~a plurality of virtual computers operating on a physical~~
~~computer; a reallocation section for dynamically allocating physical resources of said~~
~~physical computer to said plurality of virtual computers; a~~ said load monitor for
~~collecting~~ collects load of at least one of said virtual computers with a fixed interval,
and ~~for detecting~~ detects periodic changes of collected load data; ₁ and
wherein a ~~said~~ controller ~~for determining~~ determines said physical resource
allocation based on said periodic change of the load ₁ and ~~for demanding~~ demands
periodical allocation of physical resources to said reallocation section.

23. (currently amended) A virtual computer system according to claim 1,
wherein comprising: ~~a plurality of virtual computers operating on a physical~~
~~computer; a reallocation section for dynamically allocating physical resources of said~~
~~physical computer to said plurality of virtual computers; and a~~ said controller for
~~deciding~~ decides a priority order of allocation of physical resources to each virtual
computers in said reallocation section according to customers and agreement
conditions.

24. (original) A virtual computer system according to Claim 23, wherein said controller has a reference to judge different overload according to customers and agreement conditions for every virtual computers.

25. (new) A virtual computer system according to claim 8, further comprising:

a storing section for storing contents of a plurality of actions for changing physical resources allocated to virtual computers judged as high load by said load monitor; and

means for implementing said plurality of actions sequentially and for conducting physical resource allocation according to contents of actions having effectiveness for lowering the load.

26. (new) A virtual computer system according to claim 8, wherein said load monitor collects load of at least one of said virtual computers with a fixed interval, and detects periodic changes of collected load data, and

wherein said controller demands said physical resource allocation based on said periodic change of the load, and demands periodical allocation of physical resources to said reallocation section.

27. (new) A virtual computer system according to claim 8, wherein said controller decides a priority order of allocation of physical resources to each virtual

computers in said reallocation section according to customers and agreement conditions.

28. (new) A virtual computer system according to claim 27, wherein said controller has a reference to judge difference overload according to customers and agreement conditions for every virtual computers.

29. (new) A virtual computer system according to claim 13, further comprising:

a storing section for storing contents of a plurality of actions for changing physical resources allocated to virtual computers judged as high load by said load monitor; and

means for implementing said plurality of actions sequentially and for conducting physical resource reallocation according to contents of actions having effectiveness for lowering the load.

30. (new) A virtual computer system according to claim 13, wherein said load monitor collects load of at least one of said virtual computers with a fixed interval, and detects periodic changes of collected load data; and

wherein said controller demands said physical resource allocation based on said periodic change of the load, and demands periodical allocation of physical resources to said reallocation section.

31. (new) A virtual computer system according to claim 13, wherein said controller decides a priority order of allocation of physical resources to each virtual computers in said reallocation section according to customers and agreement conditions.

32. (new) A virtual computer system according to claim 31, wherein said controller has a reference to judge different overload according to customers and agreement conditions for every virtual computers.